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Beacon Number
Sampling Interval
Instruction Information

10

Average Speed = $\sqrt{}$
(or traveling distance)

Fig. 1

ビーコン番号
サンプリング間隔
指示情報

ビーコン

平均速度 = $\sqrt{ }$
(or 移動距離)

Average Speed = $\sqrt{ }$
(or traveling
distance)

ビーコン
Beacon

平均速度 = $\sqrt{ }$
(or 移動距離)

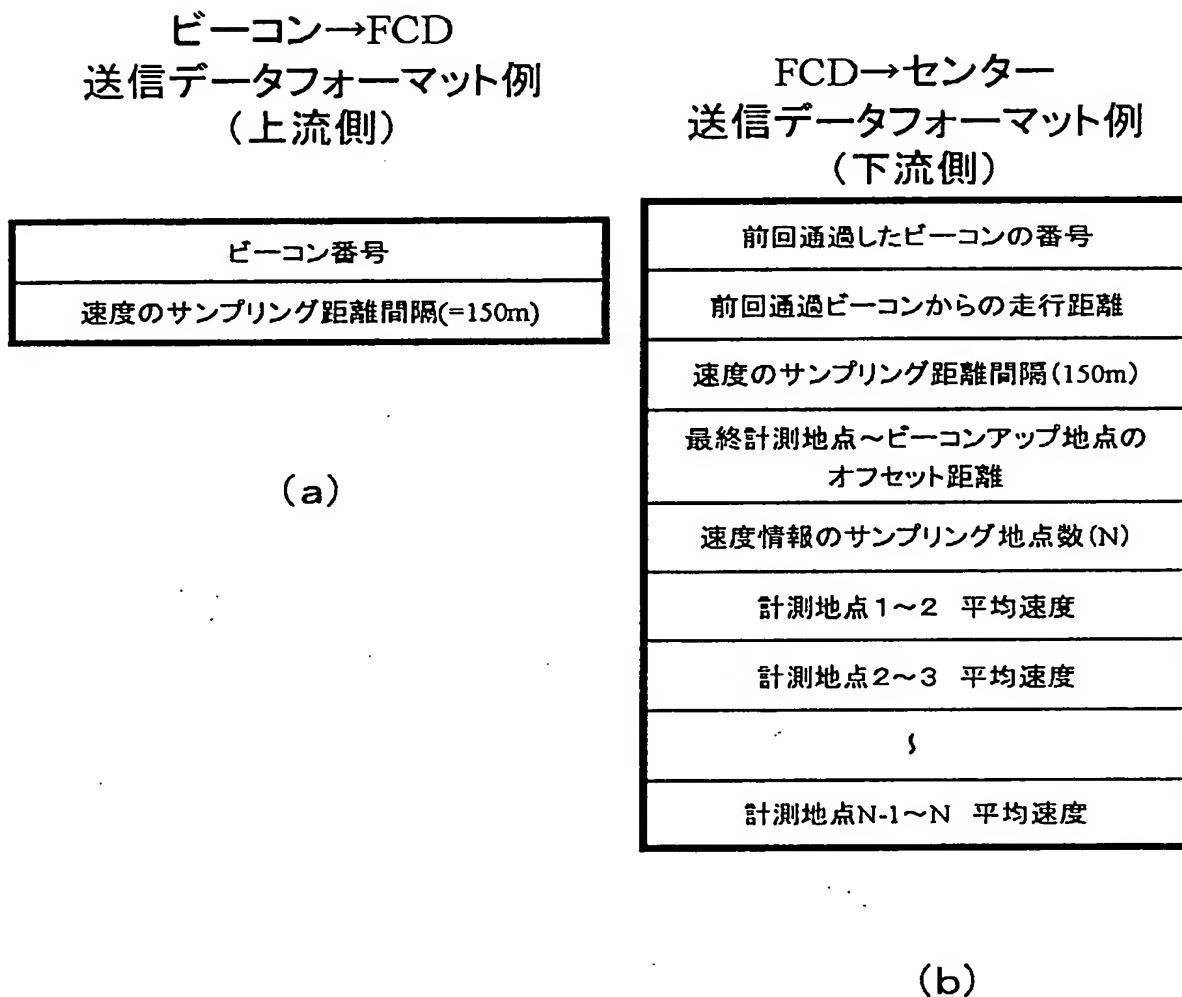
前回通過したビーコン番号
各計測地点の平均速度
(or 移動距離)

Preceding beacon number
Average Speeds (or traveling
distances) at respective
measuring points

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図 2

普通のデータコーディング送信方法



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Beacon Number
Sampling interval
Instrument information

10

Average Speed = v
(or transit time)

前回通過したビーコン番号
各計測地点の平均速度
（或 通過時間）

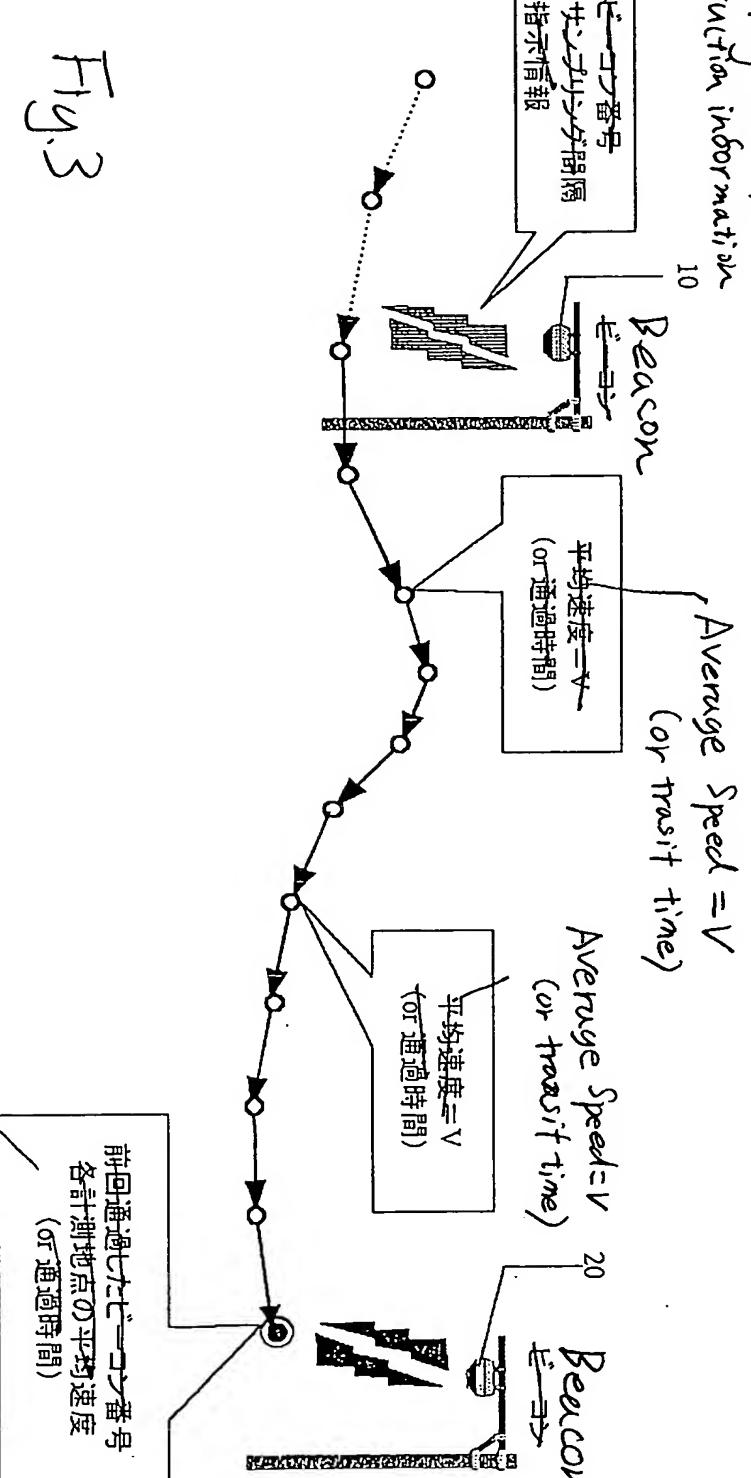


20

前回通過したビーコン番号
各計測地点の平均速度
（或 通過時間）



Fig.3



Preceding beacon number
Average speeds (or traveling
distances) at respective
measuring points

4

ビーコン→FCD 送信データフォーマット例 (上流側)

- ビーコン番号
- 符号化方法の指示番号
- 速度のサンプリング距離間隔(=150m)
- 速度情報の量子化単位
- 速度差△Vの符号表

(a)

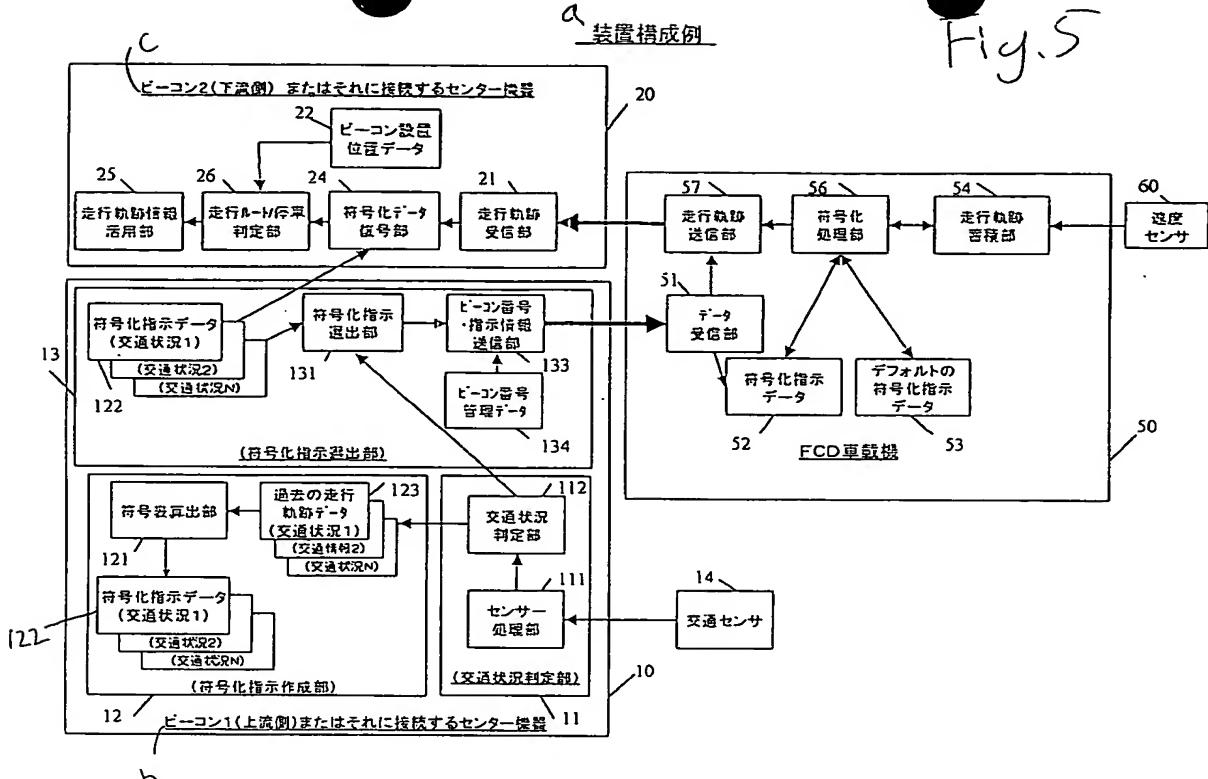
FCD→センター 送信データフォーマット例

前回通過したピーコンの番号
前回通過ピーコンからの走行距離
使用している符号化方法の識別番号
速度のサンプリング距離間隔(150m)
最終計測地点～ピーコンアップ地点の オフセット距離
速度情報のサンプリング地点数(N)
最終計測地点の絶対速度
前ノードに対する速度差分の 符号化データ (ΔV_i , ランレンジスを符号化 したビット列)

(b)

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Fig. 5



- a. CONFIGURATIVE EXAMPLE OF THE SYSTEM
 - b. beacon #1 (upstream side) or center equipment
 - connected thereto
 - 11. traffic condition deciding portion
 - 111. sensor processing portion
 - 112. traffic condition deciding portion
 - 12. coding instruction forming portion
 - 121. code table calculating portion
 - 122. coding instruction data (traffic condition 1)(traffic condition 2)..(traffic condition N)
 - 123. past traveling locus data (traffic condition 1)(traffic condition 2)..(traffic condition N)
 - 13. coding instruction selecting portion
 - 131. coding instruction selecting portion
 - 133. beacon number/coding instruction transmitting portion
 - 134. beacon number management data
 - 14. traffic sensor

c. beacon #2 (downstream side) or center equipment

 - 20 connected thereto
 - 21. traveling locus receiving portion
 - 22. beacon arranging position data
 - 24. coding data decoding portion
 - 25. traveling locus information utilizing portion
 - 26. traveling route/stop deciding portion
 - 50. FCD in-vehicle unit
 - 51. data receiving portion
 - 52. coding instruction data
 - 53. default coding instruction data
 - 54. traveling locus accumulating portion
 - 56. coding processing portion
 - 57. traveling locus transmitting portion
 - 60. speed sensor

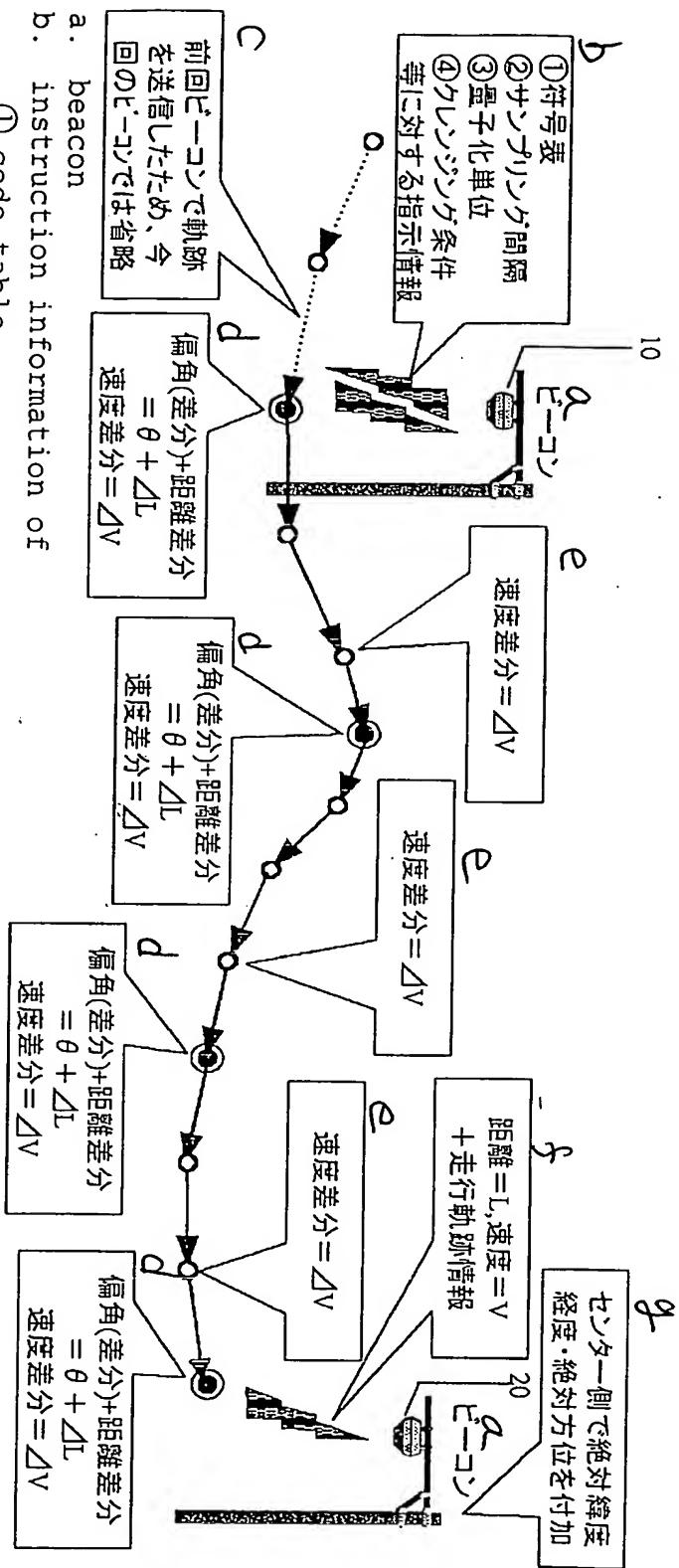


Fig. 6

図 7

ビーコン→FCD 送信データフォーマット例

符号化方法の指示番号
偏角表現か、偏角予測差分表現かの 識別フラグ(=偏角表現)
等時間サンプリングか、等距離 サンプリングかの識別フラグ、 および計測情報の指示 (=等距離サンプルで、計測情報は θ, V)
位置情報のサンプリング距離間隔(=200m)
速度情報のサンプリング距離間隔(=25m)
偏角の量子化単位(=3°)
速度情報の量子化単位
偏角 θ の符号表
速度差 ΔV の符号表

図 8

速度情報の量子化単位

量子化量	速度(km/h)
0	0
1	1
2	2
3	3
4	4
5	5~6
6	7~8
7	9~10
8	11~13
9	14~16
10	17~19
11	20~24
12	25~29
13	30~34
14	35~39
15	40~44
16	45~49
17	50~59
18	60~69
↓	

図 9

 θ の符号表

(a)

θ の値 (量子化単位差)	符号	付加ビット
0	0	0
0のランレンジス8	11110	0
± 1	100	1(±識別)
± 2	101	1(±識別)
± 3	1100	1(±識別)
		↓

(b)

 ΔV の符号表

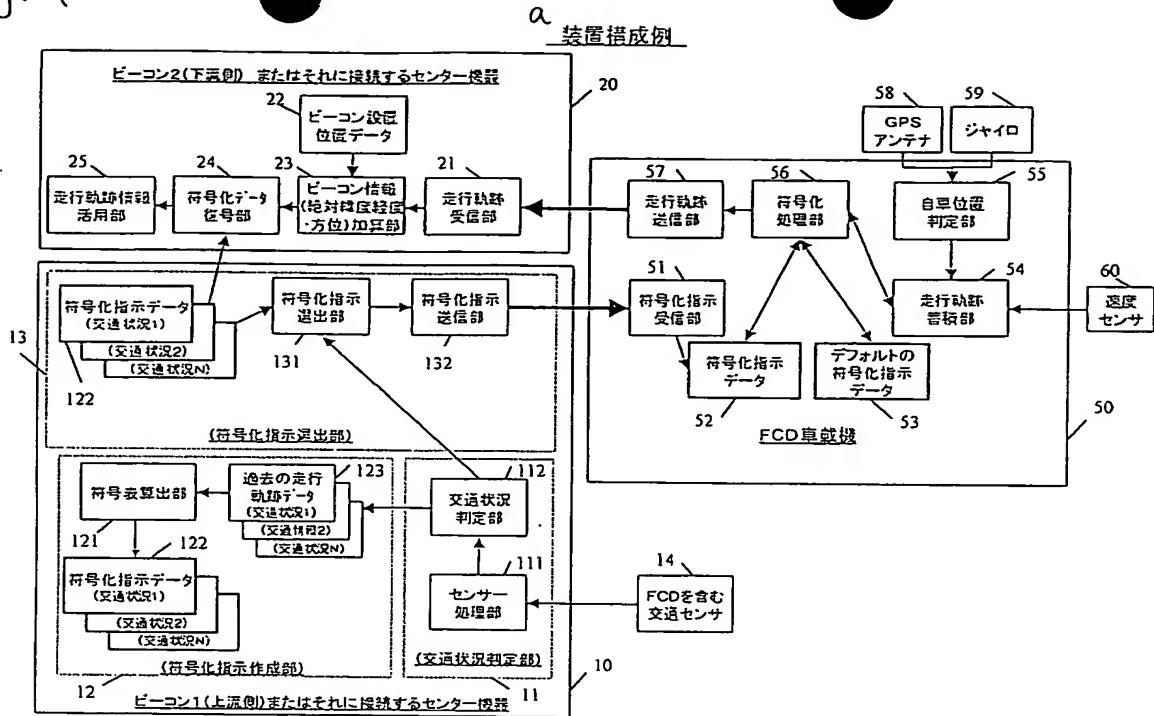
ΔV の値 (量子化量差)	符号	付加ビット
0	0	0
0のランレンジス8	11110	0
± 1	100	1(±識別)
± 2	101	1(±識別)
± 3	1100	1(±識別)
		↓

図 10

FCD→ビーコン 送信データフォーマット例

車両ID情報
符号化方法の指示番号
θ の計測ポイント数
前計測地点に対する偏角 θ の符号化データ (θ を符号化したビット列)
最終計測位置の速度 V
△V の計測ポイント数
前ノードに対する速度差分の符号化データ (△V を符号化したビット列)

Fig. II



- a. CONFIGURATIVE EXAMPLE OF THE SYSTEM
10. beacon #1 (upstream side) or center equipment connected thereto
 11. traffic condition deciding portion
 11. sensor processing portion
 12. traffic condition deciding portion
 12. coding instruction forming portion
 12. code table calculating portion
 12. coding instruction data (traffic condition 1) (traffic condition 2)..(traffic condition N)
 13. coding instruction selecting portion
 13. coding instruction selecting portion
 13. coding instruction transmitting portion
 14. traffic sensor including FCD
 20. beacon #2 (downstreamside)or center equipment connected thereto
 21. traveling locus receiving portion
 22. beacon arranging position data
 23. beacon information (absolute latitude longitude/bearing) adding portion
 24. coding data decodingportion
 25. traveling locus information utilizing portion
 50. FCD in-vehicle unit
 51. data receiving portion
 52. coding instruction data
 53. default coding instruction data
 54. traveling locus accumulating portion
 55. user's own vehicle position deciding portion
 56. coding processing portion
 57. traveling locus transmitting portion
 58. GPS antenna
 59. gyro
 60. speed sensor

図 1 2

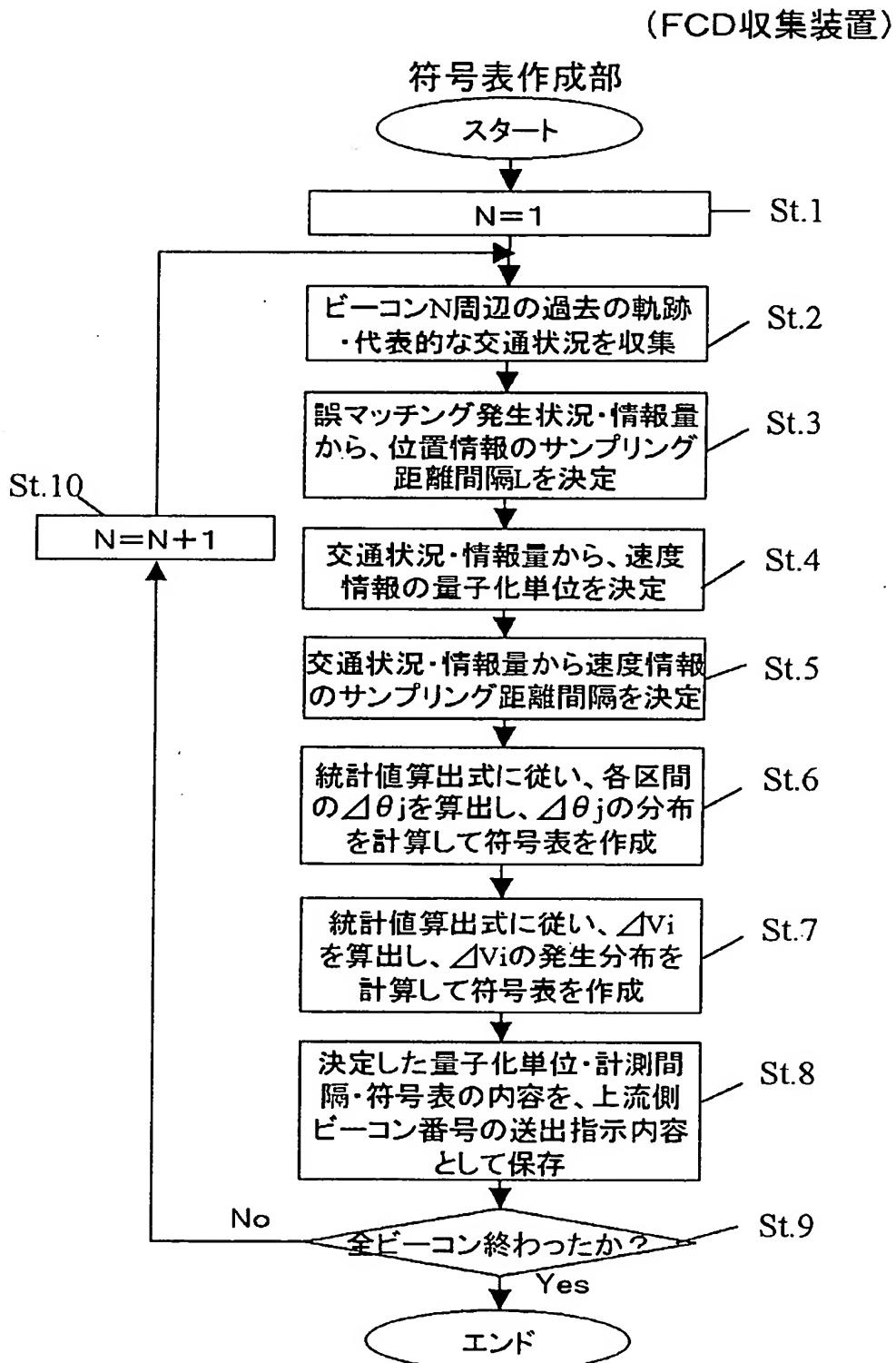


図 1 3

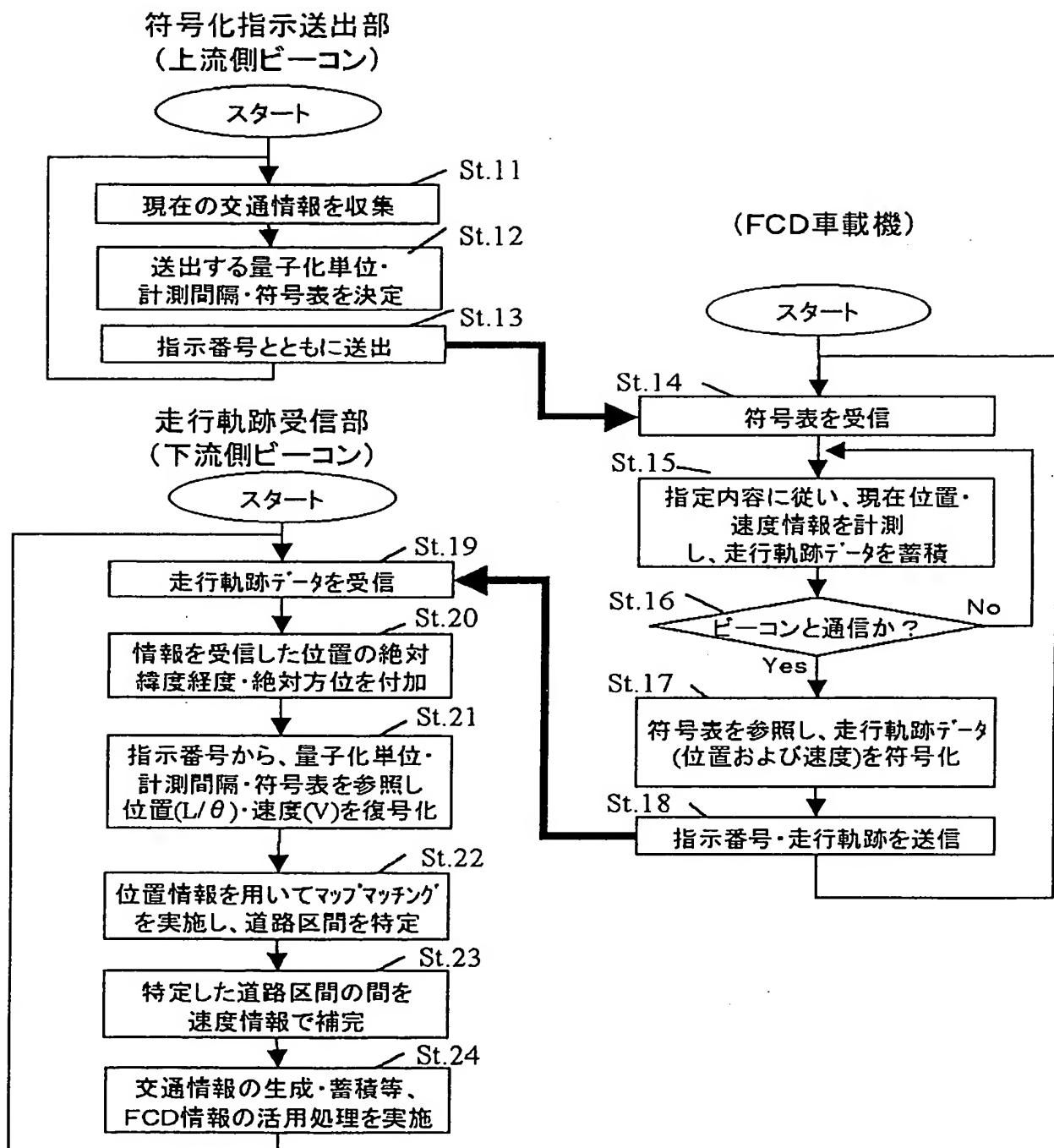
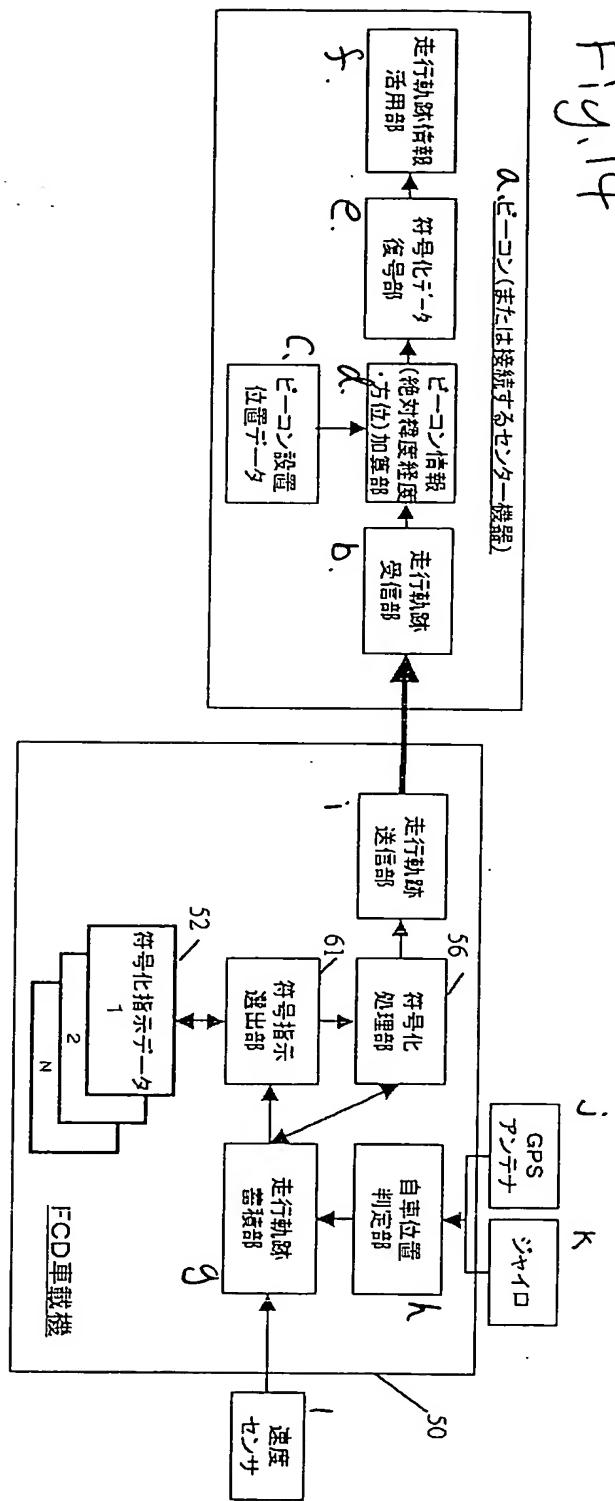
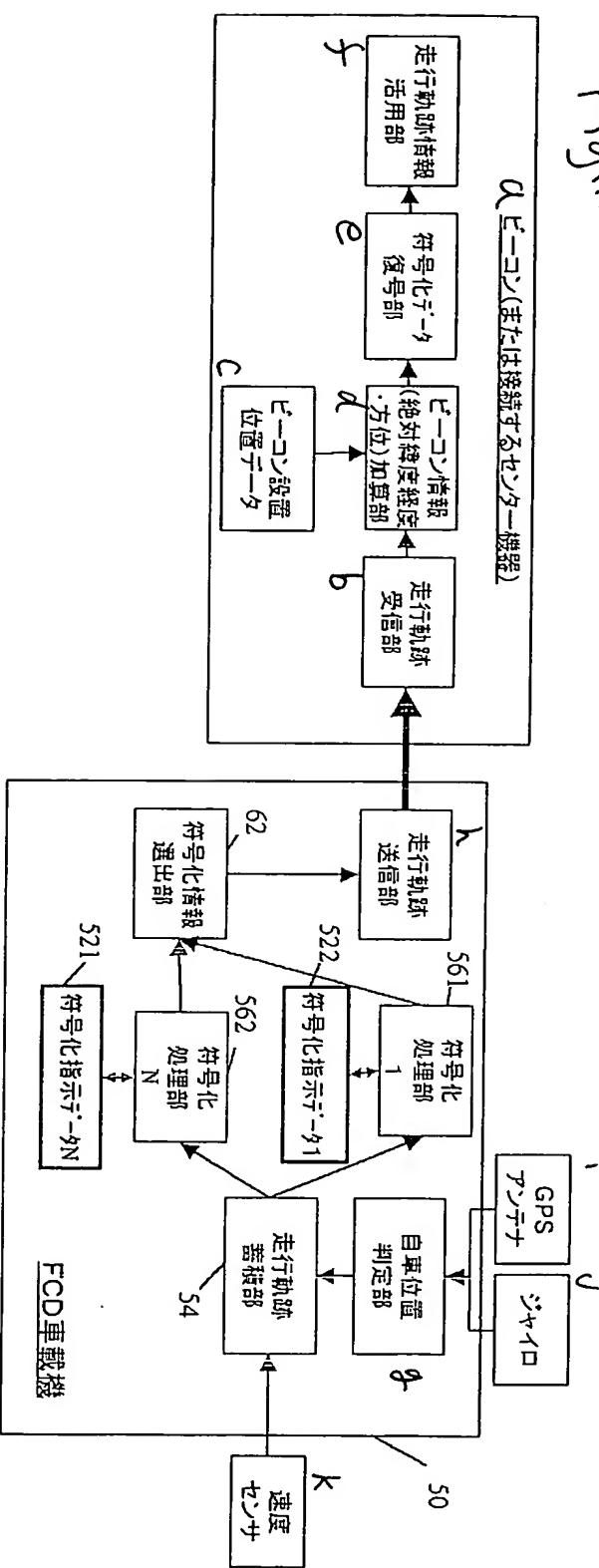


Fig.14



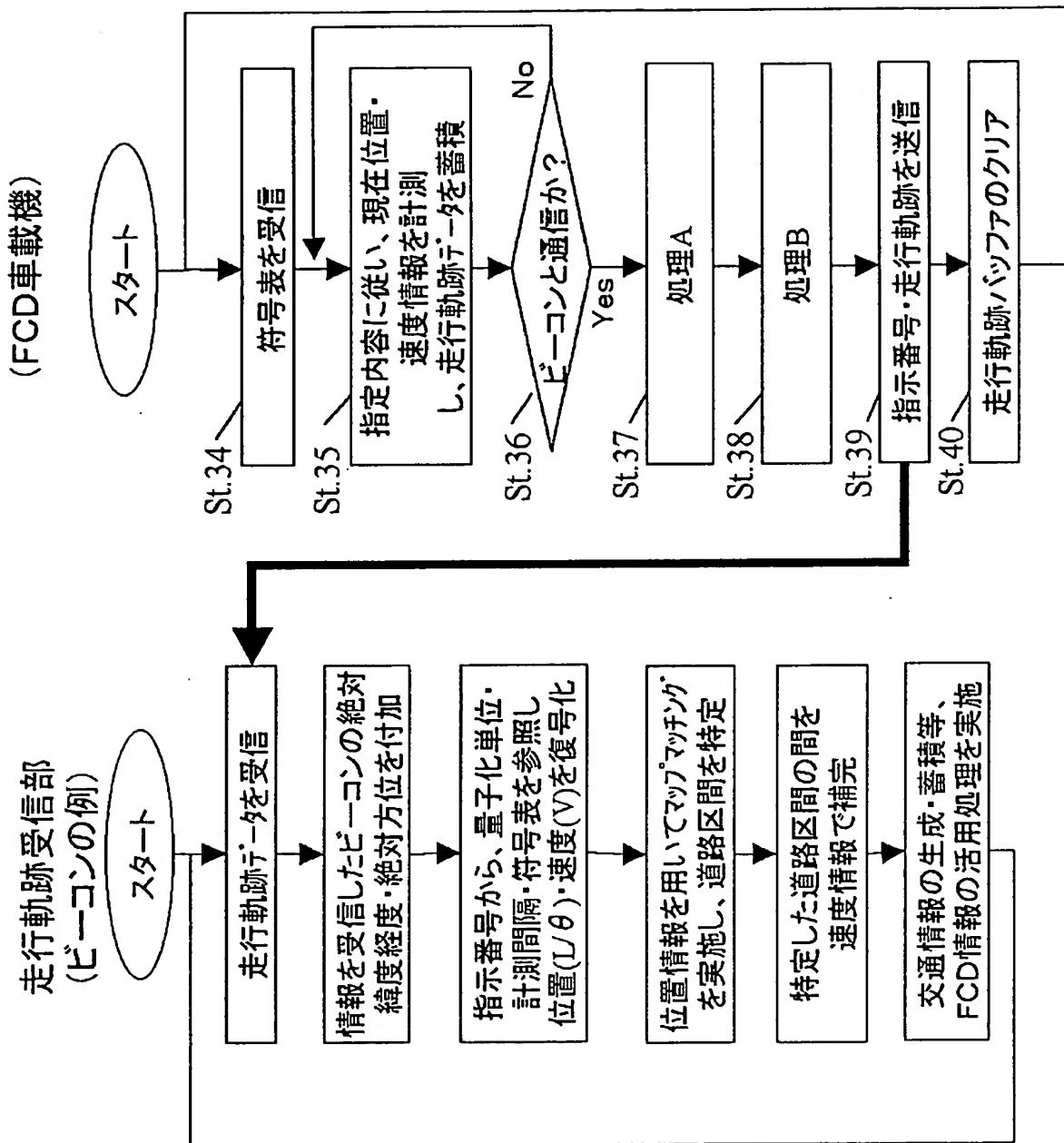
- a. beacon (or center equipment connected thereto)
- b. traveling locus receiving portion
- c. beacon arranging position data
- d. beacon information (absolute latitude longitude/bearing) adding portion
- e. coding data decoding portion
- f. traveling locus information utilizing portion
- 50. FCD in-vehicle unit
- 52. coding instruction data
- 54. traveling locus accumulating portion
- 56. user's own vehicle position deciding portion
- 56. coding processing portion
- i. traveling locus transmitting portion
- 51. traveling locus transmitting portion
- j. GPS antenna
- k. gyro
- l. speed sensor

Fig. 15



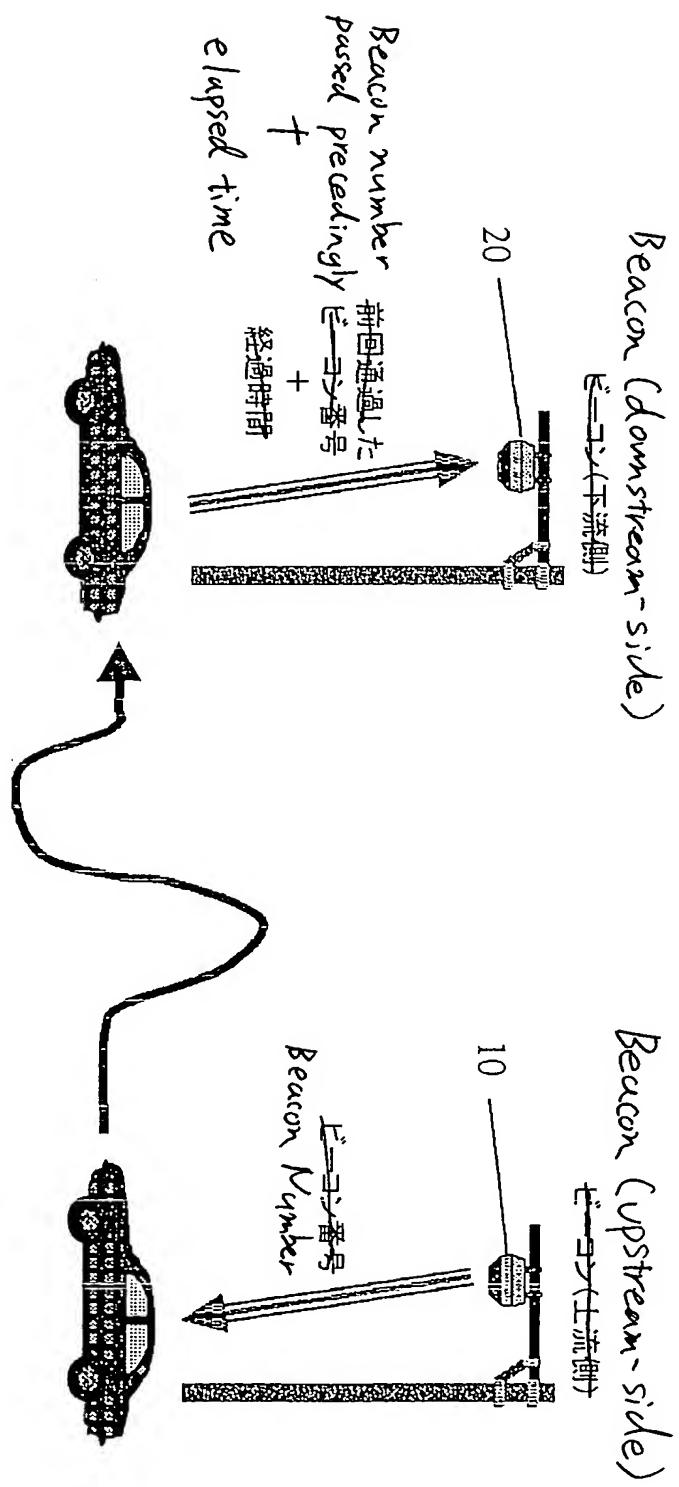
- a. beacon (or center equipment connected thereto)
- b. traveling locus receiving portion
- c. beacon arranging position data
- d. beacon information (absolute latitude longitude/bearing) adding portion
- e. coding data decoding portion
- f. traveling locus information utilizing portion
- 50. FCD in-vehicle unit
- 54. traveling locus accumulating portion
- g. user's own vehicle position deciding portion
- h. traveling locus transmitting portion
- 62. coding information selecting portion
- 521. coding instruction data N
- 522. coding instruction data 1
- 561. coding processing portion 1
- 562. coding processing portion N
- i. GPS antenna
- j. gyro
- k. speed sensor

図 16



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Fig.17



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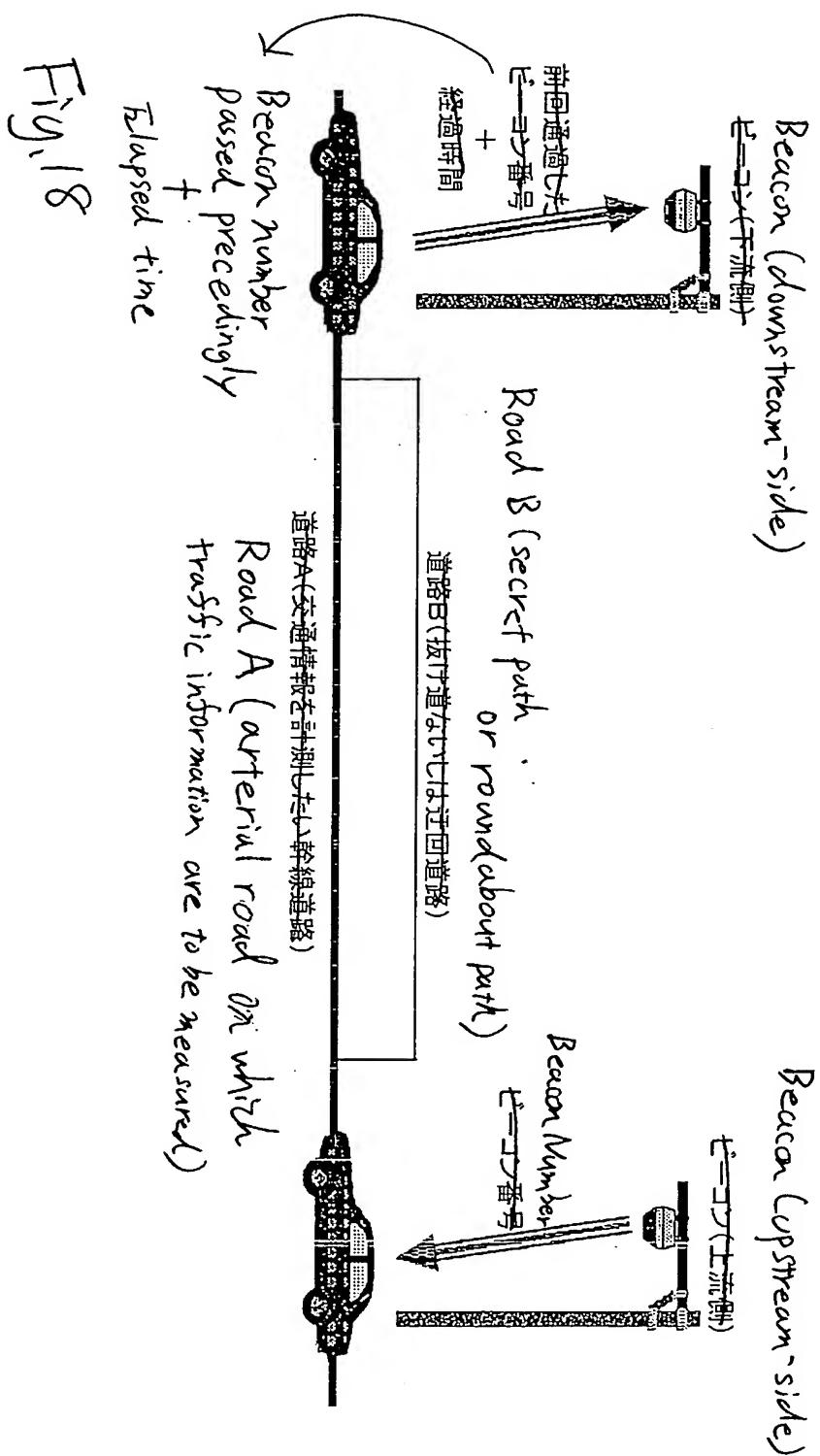


Fig.18

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